

WHITNEY MUSEUM OF AMERICAN ART

COLLECTION IN CONTEXT

JOSEPH CORNELL
COSMIC TRAVELS

DECEMBER 14, 1995-MARCH 10, 1996

THE COSMOLOGY OF JOSEPH CORNELL

One of the pleasures of science comes from the discovery of subtle connections among events that we experience in our daily lives. At first glance, these events often seem unrelated, but scientists can guide us through an underground of abstract and often beautiful connections and meanings. The pleasure of art is not entirely different. The artist gives us allusions and hints; a piece of art makes its point indirectly, by implication. Much of the pleasure of art comes from our ability to see beneath the surface and discover these connections.



The Atmosphere as a Thermostat, c. 1958

When an artist such as Joseph Cornell takes images and ideas from the realm of science, we are tempted to look for the concepts that may have tied them together in his mind. By examining Cornell's selection of materials and the way he has put them together, one can infer—that is, reconstruct—his cosmology.

To an astronomer, Cornell's boxed constructions are quite remarkable. Their interior walls are peppered with stars and constellation outlines, overlaid with a tracing of mythological figures. His concept of a universe in a box echoes that of astronomers throughout history who have attempted, through constructions of three-dimensional spherical models, to encapsulate the infinite. Certainly, though, Cornell's work emphatically denies Giordano Bruno's terrifying proclamation three hundred years ago that the universe in fact extends without limit in all directions.

By boxing the universe, Cornell has taken us back to the times of the ancient Greeks—even back to the mythology of the starry constellations. Ancient science was a study of appearances and mathematical patterns. Modern science, on the other hand, takes us beyond appearances; it invents abstract explanations, such as General Relativity and Quantum Theory. These modern theories are nonsensical by most standards—for laypeople and scientists alike—and are not applied in daily life. Instead, we live by a more comfortable, old-fashioned cosmology that is based on appearances. For example, despite the images of the earth and our moon sent back from space telescopes, we still say that the sun “rises” at dawn. We do not think of our home as a sphere spinning in space, dipping our horizon down toward the sun. The flat earth conforms to our expectations and provides a more comfortable perch.

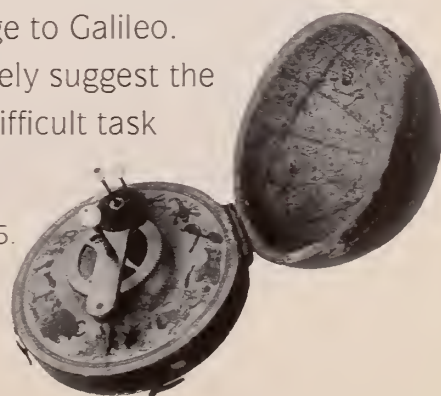
The mythological figures in Cornell’s constructions suggest that the ancient understanding of the universe—though rich in symbolism—is limited and limiting. The appearance of these robed, godlike figures floating across the sky serves to remind us of the differences between ancient cosmology and modern science.

Classical astronomers saw the sky as a world of perfection, far above our earthly life. Stars were little more than glints of light marking the paths of a divine sun and moon. The stars were not so much actors as they were the stage sets for mythological dramas. The ancients relied on these dramas to give meaning to the lives of mere mortals on earth.

Modern astronomers, by contrast, see the stars as players in a drama which has brought life to earth. The mythological characters are no longer needed. We mortals, too, are actors in the cosmic drama. Our blood and flesh were born from the chemical elements that were created in the stars, so we ourselves form a link between the celestial and the earthly.

If the constellation maps Cornell used seem ancient and even outdated, the objects inside the boxes are somewhat more modern. Although we see balls and rods, we see nothing of the ancient Greek wheels and epicycles holding the planets in their orbits. Instead, Cornell’s planets roll freely on pairs of horizontal rods. We can imagine picking up a box and tilting it to watch the balls roll back and forth. This motion would imitate some of Galileo’s experiments in the seventeenth century, which laid the groundwork for the development of modern physics. He studied the motions of balls by rolling them downhill on smooth runways, and discovered a mathematical description of acceleration by gravity. Cornell’s rods would have suited his experiments very nicely. Galileo would have thought Cornell’s constructions thoroughly modern, and we can enjoy them today as a sort of homage to Galileo.

However, the balls and rods Cornell used do not merely suggest the movements of earthly bodies. The artist set himself the difficult task

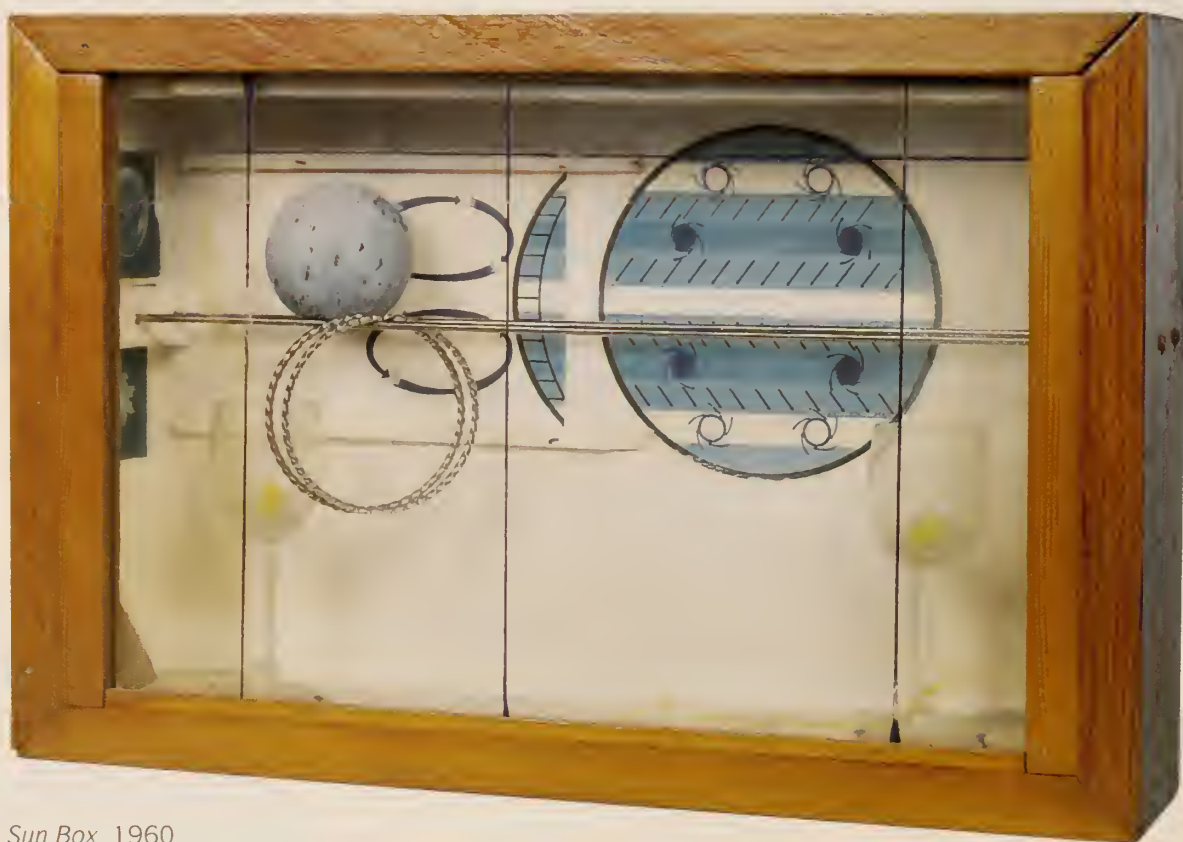


of evoking the mobility of the planets, and his solution is ingenious. He rests planets on parallel metal rods. However, despite its ingenuity, the modern astronomer would fault it for failing to convey the freedom of motion allowed the members of our solar system. As described by Isaac Newton, the planets float freely through space, deflected by the gentle pull of gravity from the sun, other planets, and their moons. No rods restrict the motions of the real planets.

Cornell uses several devices to remind us of Isaac Newton's theory of gravity. The transparent crystalline goblets holding the balls aloft recall that the earth's gravity pulls us toward its center, and we imagine the balanced forces of the ball on the glass and the glass on the ball. These balls carry our mind's eye beyond appearance, to the invisible force of gravity that binds the planets and their satellites to each other and to the sun. An occasional ring suspended from a rod provides a crude analogy to the nearly circular orbit of planets about the sun.

Together, Cornell's paradoxical juxtaposition of ancient constellations and the steel rods and balls of more modern scientific study allude to our universal tendency to retain ancient modes of thought while conceding that science continues to advance our understanding of the workings of our universe. Cornell's constructions bring into focus the difference between the ancient worlds of appearance and the abstract and often strange world of modern scientific theory. Cornell playfully reminds us that there is more to the universe than meets the eye.

Charles A. Whitney
Professor Emeritus of Astronomy, Harvard University



Sun Box, 1960

IMAGINARY VOYAGES

Late one night, while home on vacation from boarding school, a young Joseph Cornell found himself troubled by thoughts and unable to sleep. His sister Elizabeth recalled:

...he woke me, shivering awfully, and asked to sit on my bed. He was in the grips of panic from the sense of infinitude and the vastness of space as he was becoming aware of it from studying astronomy.¹

Perhaps Cornell was struggling to picture the infinite universe he'd learned about in school—to map a place utterly foreign to childhood notions of geography. How can we make sense of the seemingly random patterns of the night sky? Confined to the earth, can we ever hope to understand the “vastness of space?”



Untitled (Celestial Navigation), n.d.

The questions of astronomy never ceased to intrigue Cornell. As an adult, he was an avid stargazer and subscribed to periodicals such as *Scientific American* and the Hayden Planetarium's *Sky Reporter*.² His diverse readings included histories of astronomy, articles on the most recent developments in experimental physics, constellation mythologies, and scholarly treatises on the limits of human knowledge.

Through his research, Cornell explored the most distant regions of space, and yet he rarely ventured far from his home in Flushing, Queens. He vacationed on Long Island and visited Manhattan, but preferred the sort of imaginary voyage one takes while looking at a map of the stars. Cornell therefore frequented New York's bookstores, libraries, galleries, and museums. In his wanderings, he

sought out nineteenth-century astronomy texts and antique maps. He also collected old-fashioned clay pipes, cordial glasses, colored marbles, and seashells. He stored his discoveries in labeled shoe boxes in his basement, and kept files crammed with clippings and photographs.

From these raw materials, Cornell created his collages and shadow boxes. In a sense, he equated the process of creation with actual travel. *Untitled (Celestial Navigation)* contains a fragment of a constellation map and a broken clay pipe in the form of a human head. The pipe, like a figurehead on the bow of a ship, seems to float against the backdrop of the night sky. With this box, Cornell reminds us that the stars have always guided mariners—even armchair travelers like Cornell.

Ultimately, it may not have bothered Cornell that he would never embark on an ocean voyage, for he could just as easily explore the cosmos from his own backyard—the kitchen window was his observatory. Late one night, Cornell sat in his kitchen and jotted down the following thoughts:

early morning sunlight, all through the years in the
kitchen against the stove catching the reflections as
well as the thousands of times kitchen as observatory,
“looking out” on the “rustic effects,” ad infinitum of
“imagery,” quince tree, birds, light shows, rains,
everything. ³

Throughout most of history, astronomers have essentially been limited to a “backyard” view of the stars. From the earth, the ultimate observatory, we can see only our immediate galactic neighborhood. Even with the strongest telescopes, we can peer only so far into the darkness. Our understanding of the cosmos is predicated not only on how far we can see, but on how much we can imagine.

A collage entitled *Weather Satellites* illustrates the limits of Cornell’s world and the expansiveness of his imagination. Birds were among the artist’s favorite creatures, and they became, for him, emblems of the human spirit. In this collage, a hummingbird imprisoned in a glass dome gazes up at the universe beyond. In the distance, a geometric figure—an icosahedron—floats like a brilliant jewel or twinkling star. Just as the bird is confined to its cage, we are confined to this earth, and yet we too are somehow able to soar



Weather Satellites, c. 1965



Soap Bubble Set (Lunar Space Object), late 1950s

above these limitations to envision the vast universe beyond the glass dome that is the night sky.

Similarly, since the time of Aristotle, astronomers had assumed that the stars formed a sort of glorious arched roof studded with lights—a crystalline barrier at the edge of the knowable universe. The “sphere of the fixed stars” was the outermost layer of a universe built of nested shells, with the earth as its fixed center.⁴

To Cornell, this recurrent image of a spherical universe recalled a favorite childhood pastime, blowing soap bubbles. Boxes such as *Soap Bubble Set (Lunar Space Object)* served as models of a universe Cornell constructed in his imagination—a universe built of soap bubbles. This example includes a clay pipe, the essential tool required for bubble blowing. A cordial glass suggests the translucence of soap film; the cork ball, a bubble’s spherical form. In the background, an image of the moon hovers above the pipe like a large but distant soap bubble. In these floating, glistening orbs he saw the moon, stars, and planets:

Shadow boxes become poetic theaters or settings wherein are metamorphosed the elements of a childhood pastime. The fragile, shimmering globules become the shimmering but more enduring planets—a connotation of moon and tides—the association of water less subtle, as when driftwood pieces make up a proscenium to set off the dazzling white of seafoam and billowy cloud crystallized in a pipe of fancy.⁵

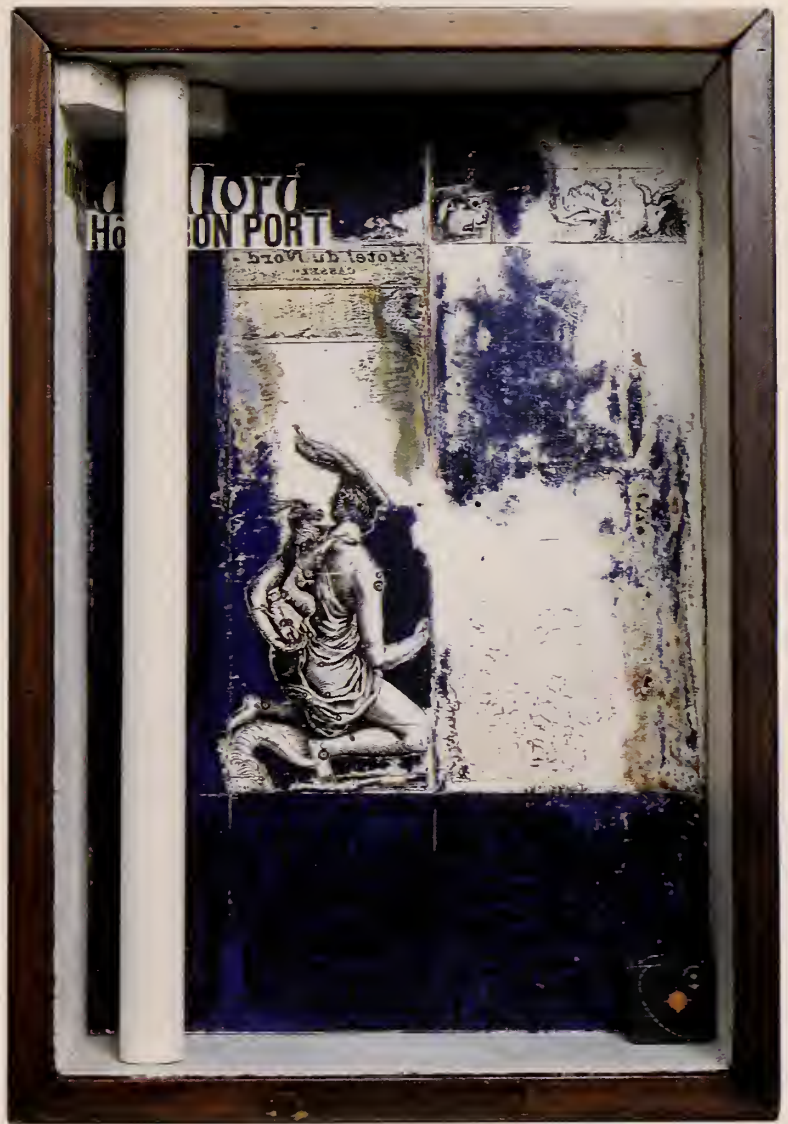
Like *Soap Bubble Set (Lunar Space Object)*, many of Cornell's shadow boxes contain movable parts such as metal rings and balls which slide back and forth on parallel rods. These boxes are not static cosmological models, but demonstrations of the mechanics of the universe. *Celestial Navigation*, for example, features five evenly spaced cordial glasses placed in a series of recessed niches. Each glass holds a single object, suggesting the invisible forces that hold the planets in orbit. One glass contains a small shell; another, a piece of driftwood. Illustrations of the sun and planets clipped from a children's book cover cylinders which hang from a metal rod, as if to approximate other, more conventional astronomical models such as armillary spheres and orreries. In fact, Cornell saw and admired a collection of scientific instruments during a 1941 visit to the Hayden Planetarium in New York. He recorded his impressions in his diary:

The Planetarium was another moving experience, especially on the second floor with its blue dome, silhouetted city sky-line fringing it, and the gradual appearance of all the stars in the night sky to music.... The astronomical paraphernalia: charts, transparencies, broken meteors, and especially compass curios (also armillaries, telescopes, etc.) are intriguing.⁶

The drawer of *Celestial Navigation* opens to reveal white sand, a wire spiral, bits of glass, and a piece of coral. Seemingly endless oceans and uncountable grains of sand thus become metaphors for the infinite and the



Celestial Navigation, c. 1956–59



Hôtel du Nord, c. 1953

eternal. Yet Cornell also implies that the larger patterns of the universe are somehow evident in a single seashell, a grain of sand, or even a humble soap bubble.

Cornell was forever in search of these sorts of meaningful connections between sky and sea, macrocosm and microcosm, science and mythology. In a sense, he found a historical soulmate in the astronomer Johannes Kepler. Cornell admired not only Kepler's discoveries, but his eccentric personality. In a diary entry, Cornell described Kepler as "that tortured mystic."⁷ In his treatise *Harmony of the World*, Kepler set out to interpret the work of the divine geometer and to correlate mathematics and music, astronomy and theology, into an all-encompassing system.⁸ Whereas Cornell imagined a soap bubble universe, Kepler envisioned a universe of nested, translucent shells, governed by the laws of geometry, reverberating in the "harmony of the spheres."

Like Kepler, Cornell believed that there must be an underlying pattern to the universe—a pattern evident in a bubble's perfect form, or in the configuration of stars in the night sky. Yet this desire to find meaning in the cosmos is age-old. Whereas Cornell looked at the moon and planets and saw soap bubbles, ancient astronomers looked up at the sky and saw pictures of mythic beasts and heroes.

Cornell was fascinated by these early attempts to understand the stars, and he was familiar with even the most obscure bits of constellation trivia. The story of Auriga, a lesser-known myth, was one of his favorites (he reprinted it in a 1955 exhibition announcement). Auriga, a figure of a man carrying a goat,

shines nearly overhead in winter, and would ordinarily
be the first bright star to beam down through the breaking
clouds of a storm at that season; it is not difficult to
imagine how it got its reputation as the seaman's friend.⁹

Auriga reappears in *Hôtel du Nord*. A column to the left of the box hints at architecture; the box has therefore been compared both to a hotel room and to the interior of a ship.¹⁰ Through a window, Auriga shines in the distance, guiding an imaginary voyage through the stars.

Yet for Cornell, the term constellation came to signify, not just a favorite theme, but his method in general. His obsessive record-keeping and never-ending search for significant cross-references were guided by this impulse. Cornell connected disparate bits of information like so many points of light. These connections were often subtle, elusive. In his diaries, he lamented:

...the gulls overhead brought a strong evocation of the
house on the hill...a "link"— the "reassurance" and
"continuity" of a thread so tenuous, so hard at times to
keep hold of (or perhaps to communicate to others is
what I mean).¹¹

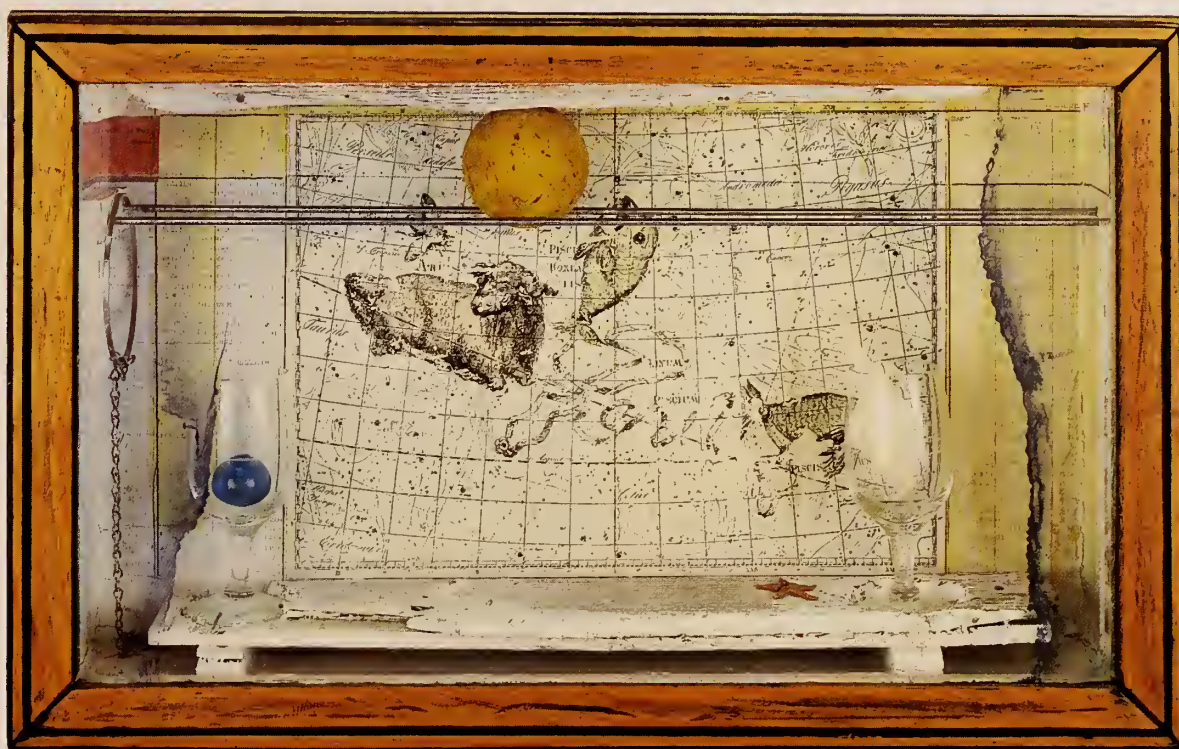
As frustrating as the process sometimes seemed, Cornell's search for meaningful connections was ultimately guided by faith. His adolescent fear of the "vastness of space" was replaced by an enduring curiosity about the universe beyond his own backyard, and a mature resignation that the answers might be ultimately unattainable. The search for cosmological truths was, nevertheless, worthwhile.

In the fall of 1951, Cornell spent a month at his sister Elizabeth's farm on Long Island. This brief respite from his home in Queens inspired a renewed appreciation of nature, and a feeling of wonder he tried to capture in his diaries:

the expansiveness of the heavens, the song of nature,
the breezes, the fragrances of the grasses—like a great
breathing, deep, harmonious, elemental, cosmic.¹²

Wherever he looked in the night sky, Cornell found evidence of greater truths. Yet perhaps the most compelling evidence was found closer to home, for it is indeed a wonder that we can imagine the cosmos at all.

Angela Kramer Murphy
Gallery Coordinator, Education
Whitney Museum of American Art at Champion



Untitled (Constellations zodiacales), c. 1958

NOTES

1. Elizabeth Cornell Benton, quoted in Lynda Roscoe Hartigan, "Joseph Cornell: A Biography," in Kynaston McShine, ed., *Joseph Cornell*, exh. cat. (New York: The Museum of Modern Art, 1980), p. 95.
2. Lindsay F. Blair, "The Working Method of Joseph Cornell," Ph.D. diss. (Colchester, England: University of Essex, 1991), p. 133.
3. Cornell, diary entry dated April 4, 1964, quoted in Mary Ann Caws, ed., *Joseph Cornell's Theater of the Mind* (New York: Thames and Hudson, 1993), p. 361.
4. Stephen Toulmin and June Goodfield, *The Fabric of the Heavens: The Development of Astronomy and Dynamics* (New York: Harper & Row, 1961), pp. 105–12.
5. *Objects by Joseph Cornell*, exhibition announcement (Beverly Hills, California: Copley Galleries, 1948), n.p., quoted in Dore Ashton, *A Joseph Cornell Album* (New York: The Viking Press, 1974), pp. 64–65.
6. Cornell, diary entry dated July 15, 1941, quoted in Caws, *Joseph Cornell's Theater of the Mind*, p. 96.
7. Cornell, undated diary entry, quoted in Dawn Ades, "The Transcendental Surrealism of Joseph Cornell," in McShine, *Joseph Cornell*, p. 32.
8. Arthur Koestler, *The Sleepwalkers: A History of Man's Changing Vision of the Universe* (New York: The Macmillan Company, 1959), pp. 388–94.
9. Garrett P. Serviss, *Astronomy with an Opera-Glass*, 2nd ed. (New York: D. Appleton and Company, 1889), p. 23, quoted in *Winter Night Skies by Joseph Cornell*, exhibition announcement (New York: Stable Gallery, 1955), n.p.
10. Fairfield Porter, "Joseph Cornell," *Art and Literature*, no. 8 (Spring 1966), p. 129.
11. Cornell, diary entry dated February 27, 1945, quoted in Ades, "The Transcendental Surrealism of Joseph Cornell," p. 38.
12. Joseph Cornell, diary entry dated fall 1951, quoted in Hartigan, "Joseph Cornell: A Biography," p. 108.

WORKS IN THE EXHIBITION

All works listed are by Joseph Cornell (1903–1972).
Dimensions are in inches; height precedes width
precedes depth.

CONSTRUCTIONS

Untitled, early 1950s

Box construction, 1 7/8 x 14 7/8 x 9 1/8

Private collection

Hôtel du Nord, c. 1953

Box construction, 19 1/4 x 13 1/4 x 5 1/2

Whitney Museum of American Art, New York;

Purchase 57.6

Celestial Navigation, c. 1956-59

Box construction, 12 1/4 x 17 1/4 x 4

Collection of Mark Kelman

The Atmosphere as a Thermostat, c. 1958

Box construction, 9 1/8 x 13 1/4 x 3 3/4

Collection of Mr. and Mrs. Robert Lehrman

Untitled (Constellations zodiacales), c. 1958

Box construction, 10 15/16 x 17 7/16 x 3 13/16

Collection of Florence and Donald Morris

Soap Bubble Set (Lunar Space Object), late 1950s

Box construction, 9 3/4 x 14 1/2 x 3 3/4

Collection of Robert Delford Brown

Sun Box, 1960

Box construction, 10 1/8 x 15 1/4 x 3 1/2

Whitney Museum of American Art, New York;

Gift of Howard and Jean Lipman 91.34.2

Custodian—M. M., 1962

Box construction, 16 3/4 x 10 3/8 x 4 1/2

Whitney Museum of American Art, New York;

Promised gift of Howard and Jean Lipman

P.42.80

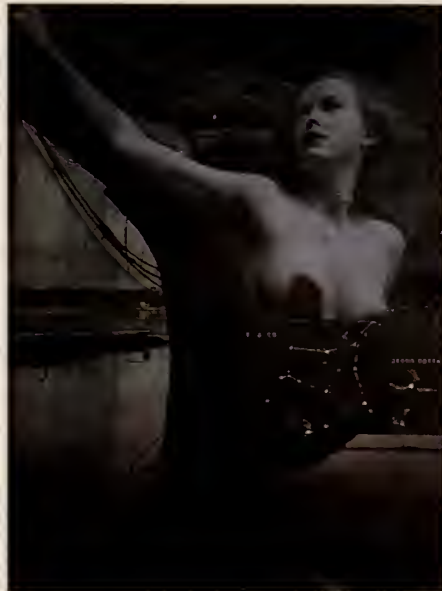
Untitled (Celestial Navigation), n.d.

Box construction, 9 5/8 x 16 1/4 x 4

Whitney Museum of American Art, New York;

60th Anniversary Gift of Estée Lauder, Inc. 92.24

COLLAGES



Untitled (Ship with Nude), c. 1965

Untitled (Ship with Nude), c. 1965

Collage, 11 1/2 x 8 1/2

Collection of Mr. and Mrs. Robert Lehrman

Weather Satellites, c. 1965

Collage, 12 x 9

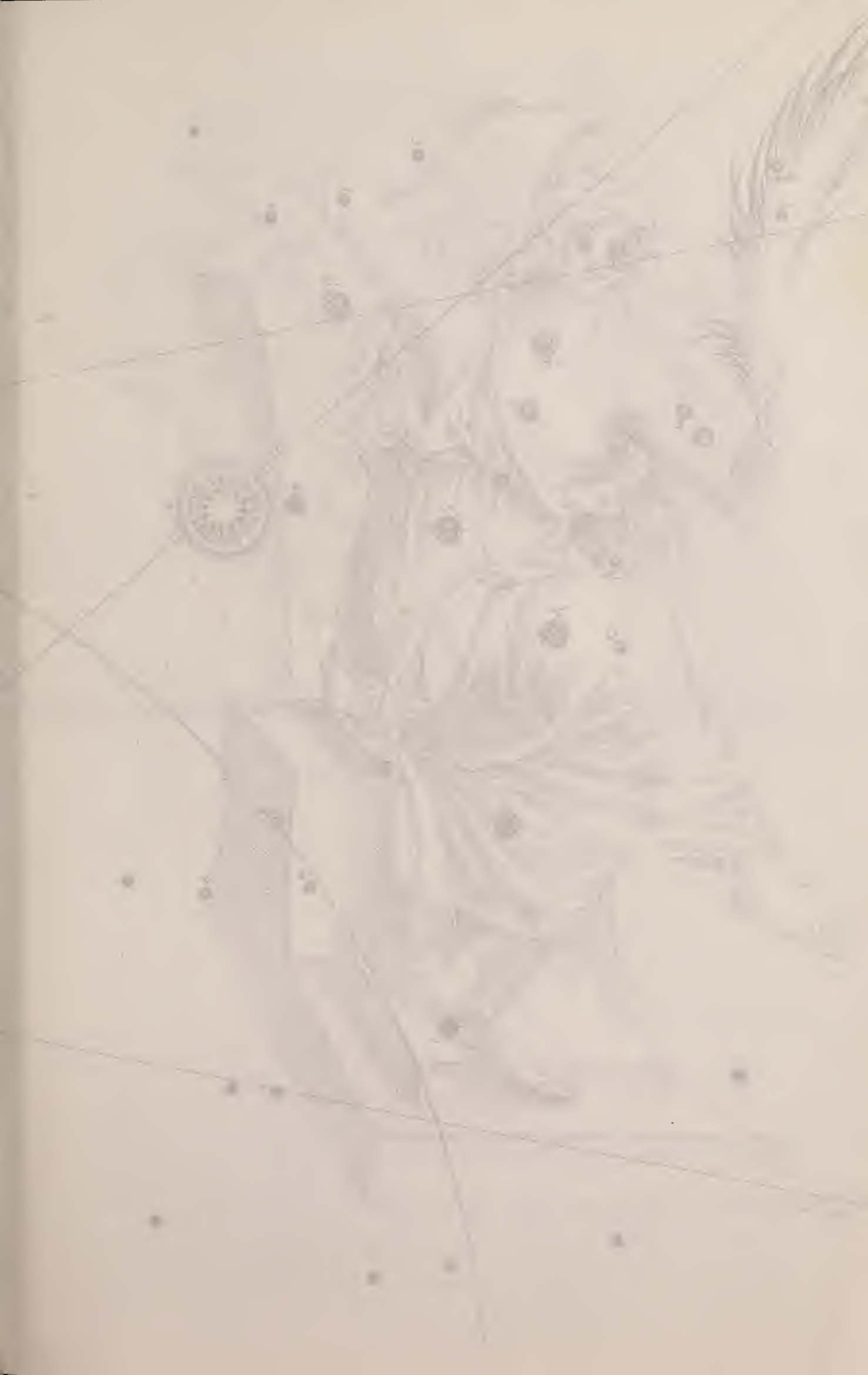
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Purchase, with funds from The Lily Auchincloss
Foundation, Richard Brown Baker, the John I.H.
Baur Purchase Fund, the Felicia Meyer Marsh
Purchase Fund, Mr. and Mrs. William A.
Marsteller, and an anonymous donor 82.23


Untitled, c. 1966

Collage, 12 1/8 x 9 1/8

The Joseph and Robert Cornell Memorial
Foundation; courtesy C & M Arts, New York

Photograph credits: *Hôtel du Nord*, *Sun Box*,
Untitled (Celestial Navigation), and *Weather
Satellites* by Geoffrey Clements. *Soap Bubble Set
(Lunar Space Object)* by Dennis Cowley. *Untitled
(Constellations zodiacales)* by Eric Pollitzer.
Celestial Navigation by Jerry Thompson.





WHITNEY MUSEUM